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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Scaringella et al.
Serial No: 09/364,727
Confirmation. No.: 9805
Filed: July 30, 1999
For: COMPUTER STORAGE SYSTEM INCORPORATING
ON-BOARD EEPROMS CONTAINING PRODUCT DATA

Examiner: Ortiz Jr., Benjamin
Art Unit: 2181

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to BOX NON-FEE AMENDMENT, Commissioner for Patents, Washington, D.C. 20231, on the 31st day of January, 2003.

William R. McClellan

William R. McClellan, Reg. No. : 29,409

BOX NON-FEE AMENDMENT

Commissioner For Patents
Washington, D.C. 20231

Sir:

Transmitted herewith are the following documents:

- ☒ Response to Office Action
- ☒ Return Receipt Postcard

If the enclosed papers are considered incomplete, the Mail Room and/or the Application Branch is respectfully requested to contact the undersigned at (617) 720-3500, Boston, Massachusetts.

A check is not enclosed. If a fee is required, the Commissioner is hereby authorized to charge Deposit Account No. 23/2825. A duplicate of this sheet is enclosed.

Respectfully submitted,
Scaringella et al., Applicant

By: *William R. McClellan*
William R. McClellan, Reg. No.: 29,409
Wolf, Greenfield & Sacks, P.C.
600 Atlantic Avenue
Boston, Massachusetts 02210-2211
Telephone: (617)720-3500

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RESPONSE

Sir:

This responds to the Office Action mailed October 31, 2002 in the above-identified application. For the following reasons, reconsideration and allowance of the application are respectfully requested.

Claims 1-14 are pending in the application. Claims 1, 7 and 12 are independent. The claims have not been amended.

The Examiner has rejected claims 1-4, 6 and 12-14 under 35 U.S.C. §103(a) as unpatentable over Dorfman et al. (6,118,862) in view of Don et al. (6,266,740). Claim 5 is rejected under 35 U.S.C. §103(a) as unpatentable over Dorfman et al. in view of Don et al. as applied to claim 1, and further in view of Wilhelm (5,761,033). Claims 7-9 and 11 are rejected under 35 U.S.C. §103(a) as unpatentable over Dorfman et al. in view of Don et al. as applied to claim 1. Claim 10 is rejected under 35 U.S.C. §103(a) as unpatentable over Dorfman et al. in

view of Don et al. as applied to claim 7, and further in view of Wilhelm. The rejections are respectfully traversed.

The Dorfman et al. patent discloses a computer telephony server for simultaneously implementing a plurality of messaging applications. The server includes a processor, a memory and a plurality of slots connected to the processor through a high-speed bus, each of the plurality of slots being adapted to receive an interface card for connecting the server to an external resource (Abstract). As shown in Fig. 2, the computer telephony server 10 includes a processor board 50 and a backplane 60. The processor board 50 includes a processor 52, a memory 54 and a disk controller 56 which is coupled to a hard drive 58. The backplane 60 includes a plurality of slots 62a-62f which are connected to a bus 64 (col. 4, lines 13-31).

The Don et al. patent discloses a method for verifying the organization of a magnetic disk storage system in which individual storage logical volumes are grouped in sequence as components of a meta device (Abstract). The disk storage system includes multiple disk drives (col. 1, lines 16-23). In some applications, the required capacity for a storage logical volume exceeds the capacity of a physical disk drive. In this case, a number of storage logical volumes are concatenated into a predetermined sequence as a meta device wherein each storage logical volume is a meta member. A meta device acts as a single host logical volume that a host addresses. With this approach, a host logical volume size becomes independent of physical drive capacity (col. 1, lines 36-50).

A problem associated with the meta device is that physical disk drives may be exchanged, resulting in data loss (col. 1, lines 51-63). To overcome this problem, the Don et al. patent describes a method wherein each storage component or meta member of a meta device has a unique signature. A dedicated storage area in each disk drive has a predetermined value in a signature field. The unique signature comprises certain configuration data for the storage logical volume. A separate configuration file stores configuration data for each component. During an integrity analysis, the signature in the dedicated storage area and the configuration data common to the dedicated storage area and the configuration file are analyzed to confirm that the storage logical volume possesses all characteristics corresponding to those in the configuration file (col. 2, lines 1-39).

Applicants' claim 1 is directed to apparatus comprising a plurality of circuit boards, each having electronic circuitry including a non-volatile memory containing product data that identifies the respective circuit board and means for reading the product data in the non-volatile memory, and a backplane for mounting and interconnecting the circuit boards.

The present invention is clearly and patentably distinguished over Dorfman in view of Don. It is respectfully submitted that the combination of Dorfman and Don is improper. It is well established that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so, found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art (MPEP §2143.01). Dorfman discloses a computer telephony system wherein a server includes a single processor board, a single disk drive and a backplane. Don, by contrast, discloses a technique for using digital signatures in a magnetic disk storage system having multiple disk drives. The digital signatures are utilized to maintain the integrity of a meta device wherein a number of storage logical volumes are concatenated into a predetermined sequence to form a host logical volume. It is respectfully submitted that there is no teaching, suggestion or motivation in the references themselves for making the asserted combination. The Dorfman patent discloses a computer telephony system, whereas the Don patent discloses a magnetic disk storage system having multiple disk drives. The Examiner has not identified any basis for modifying Dorfman to include the signature feature disclosed by Don. The Dorfman system includes a single processor board and a single disk drive, and has nothing even remotely resembling a meta device including concatenated storage logical volumes as disclosed by Don. The Dorfman system has no need for maintaining the integrity of concatenated storage logical volumes as taught by Don. For these reasons, it is submitted that the combination of Dorfman and Don is improper and should be withdrawn.

Assuming for the sake of argument that the combination of Dorfman and Don is proper, the references do not teach the apparatus defined by claim 1. In particular, the combined teachings of Dorfman and Don do not disclose or suggest a plurality of circuit boards each having electronic circuitry including a non-volatile memory containing product data that identifies the respective circuit board and means for reading the product data in the non-volatile

memory. One skilled in the art reviewing the teachings of Dorfman and Don would obtain no suggestion whatever of the apparatus defined by Applicants' claim 1. For these reasons, claim 1 is clearly and patentably distinguished over Dorfman in view of Don.

Claims 2-6 depend from claim 1 and are patentable over Dorfman in view of Don for at least the reasons discussed above in connection with claim 1.

Claim 7 is directed to a computer storage system comprising an array of storage devices, a system cache memory and a plurality of controller boards for controlling data transfer to and between the array of storage devices, the system cache memory and a host computer. Each of the controller boards has electronic circuitry including a non-volatile memory containing product data that identifies the respective controller board and means for reading the product data in the non-volatile memory.

Claim 7 is clearly patentable over Dorfman in view of Don for the reasons discussed above in connection with claim 1. In particular, the combination of Dorfman and Don is improper. Furthermore, the combined teachings of the references do not disclose or suggest a computer storage system including a plurality of controller boards wherein each controller board has electronic circuitry including a non-volatile memory containing product data that identifies the respective controller board, as required by claim 7. For these reasons and for the reasons discussed above in connection with claim 1, claim 7 is clearly patentable over Dorfman in view of Don.

Claims 8-11 depend from claim 7 and are patentable over the cited references for at least the reasons discussed above in connection with claims 1 and 7.

Claim 12 is directed to a method for identifying a circuit board, comprising placing a non-volatile memory device on the circuit board, storing product data that identifies the circuit board in the non-volatile memory device, and reading the product data in the non-volatile memory device.

Claim 12 is clearly patentable over Dorfman in view of Don. As discussed above, the combination of Dorfman and Don is improper. Furthermore, the combined teachings of the references do not disclose or suggest placing a non-volatile memory device on a circuit board and storing product data that identifies the circuit board in the non-volatile memory device as

claimed. For these reasons and for the reasons discussed above in connection with claims 1 and 7, claim 12 is clearly patentable over Dorfman in view of Don.

Claims 13 and 14 depend from claim 12 and are patentable over Dorfman in view of Don for at least the reasons discussed above in connection with claims 1, 7 and 12.

Based upon the above discussion, careful reconsideration and allowance of the application are respectfully requested. If any issues remain unresolved, the Examiner is requested to telephone Applicants' undersigned attorney.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,
Scaringella et al., Applicant

By: William R. McClellan
William R. McClellan, Reg. No. 29,409
Wolf, Greenfield & Sacks, P.C.
600 Atlantic Avenue
Boston, Massachusetts 02210-2211
Telephone: (617) 720-3500

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